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THE EDUCATION OF A SURGEON UNDER THOMAS VICARY

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THE EDUCATION OF A SURGEON UNDER THOMAS VICARY.

By SIR D'ARCY POWER, K.B.E., LONDON.

(The Second Vicary Historical Lecture, delivered at the Royal College of Surgeons of England on November 11, 1920.)

MR. PRESIDENT, MASTER OF THE WORSHIPFUL COMPANY OF BARBERS, LADIES AND GENTLEMEN :—

It is a function of history to correct the errors into which we are betrayed by mere forgetfulness. Generation succeeds generation until we are apt to think that our fathers were less skilful, or were less alive to their surroundings, than ourselves. I have chosen "The Education of a Surgeon under Thomas Vicary" as the subject of the second historical lecture at this College to combat this thought. We owe the lectureship itself to the good will of the Barbers' Company, once our competitors, then our allies, and now our very good friends. I desire to testify publicly to the satisfaction which this evidence of reconciliation excites in the minds of those who know the good historical work done by the late Mr. John Flint South, formerly President of this College, and by the late Mr. Sidney Young, a Past Master of the Worshipful Company of Barbers, work which is still being carried on by Mr. Past Master Weston and other members of the Court of Assistants.

I do not know who decided that the historical lecture should be called The Vicary Lecture, but it was a wise choice, because Vicary, in virtue of his age and position, was foremost amongst that band of pioneer surgeons who, in the reign of Henry VIII, desired to see their calling advanced from a trade to a profession. Their work was not crowned with complete success, but to their labours the surgeon owes in part his present social position in this country.

During the whole of Vicary's life medical education was undergoing changes analogous to those now occurring to which the term reconstruction is applied, and for similar reasons. In many ways the fifteenth century resembled the present time. The Wars of the Roses practically destroyed the old nobility, for attainders and executions altered the ownership of land throughout the country, whilst crushing taxation and the general insecurity hampered trade and materially reduced the wealth of the citizens. It was impossible to do business in London when such thousands of troops were quartered in the neighbourhood or were actually billeted on the citizens that "the Mayor rode daily about the city and the circuit of Holborn and Fleet Street, accompanied by five thousand craftsmen or thereabout, well and sensibly arrayed", to maintain order and prevent looting. From 1450 to 1485 English surgery suffered in the general dislocation of affairs, and no advance was made. The death of Richard on the field of Bosworth, the succession of the Earl of Richmond as King Henry VII, and his marriage with the Lady Elizabeth of York a year later, gave peace to the realm. Then, as now, the surviving generation turned for a time to religion rather than to secular matters. There was a period of church building, church restoration, and the foundation of chantries, in the same spirit which is now leading to the erection of crosses and memorials in churches and villages throughout the country.

Surgeons undoubtedly felt the lean time. London had always supported a small body of surgeons independently of the barbers. These men performed the same duties as ourselves. They undertook the more difficult operations, were called in consultation to obscure cases, and generally considered themselves to be on a higher plane than the barbers. Their practice, however, was somewhat different from our own, for they were



FIG. 162.—THOMAS VICARY.

itinerant; that is to say, when they undertook an operation they stayed with the patient until he was cured, and they seem for the most part to have been attached to the persons of the higher nobility. They charged large fees, because they could only undertake a single case at a time, and might be months before they were released from their attendance. When their lord was called out in the course of war they accompanied him, and thus saw much military service. They received their pay rather in kind than in money, for at the time of which we are speaking Ambroise Paré was paid with a cask of wine, a horse, a diamond, and a promise from a patient that he would never let him want. Such promises were quite numerous, and were usually estimated at their proper value.

During the hundred years' war with France, and during the Lancastrian and Yorkist wars in England, surgeons no doubt made a good but precarious living. With the reign of Henry VII began a long and settled peace, which obliged the surgeons to reconsider their position. The old and wealthy nobility had been destroyed, and they were compelled to turn their attention to the newly-formed middle class as it was represented by the citizens. For this purpose they entered into an agreement with the Barbers' Company in 1493—the eighth year of the reign of King Henry VII—and in this agreement there is a special clause dealing with the examination of surgeons. The licence of Robert Anson is still in existence, and is dated August 8, 1497. It states (*Fig. 163*) that he was examined by "Master John Smyth Doctour in Phesik, Instructour & examenar of the feliship . . .

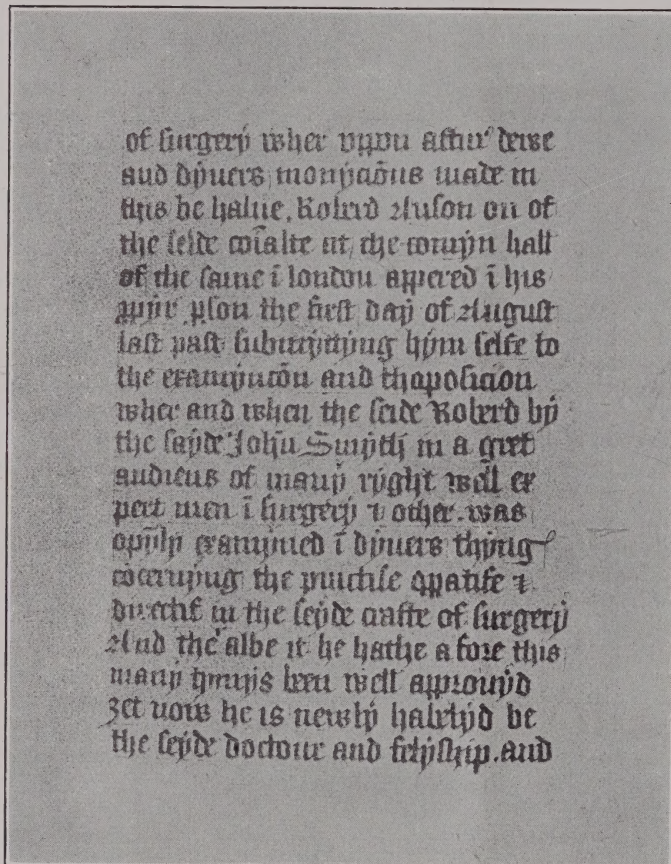


FIG. 163.

in a gret audiens of many ryght well expert men in surgery & others". Even at this early period, therefore, a special examiner had been appointed to conduct a public examination in surgery. Examination of surgeons, however, was no new thing in the fraternity of surgeons, for it was proposed in the abortive scheme of 1423, which aimed at uniting surgeons and physicians, as well as in the ordinances of 1435, which regulated the gild for many years. It seems, therefore, that the fraternity of surgeons dealt more with the practising surgeon than with the apprentice. It desired to ascertain what a man knew rather than how he had gained his knowledge—in other words, whether he was a reasonably safe practitioner—before he was allowed to practise in the area over which it ruled.

The Company of Barbers, on the other hand, dealt more with the apprentice, for the London gilds, even before they became chartered companies, had always taken an interest in the education of their members, and had endeavoured by a system of apprenticeship to provide satisfactory craftsmen. Provision for teaching and evidence of professional knowledge both before and after admission to the freedom had always been made by the Company of Barbers in London. Elsewhere in England the custom varied. Education was insisted upon when the gild consisted of barbers united with surgeons, as at Norwich, Bristol, and Edinburgh, and when the barber surgeons and physicians worked together, as at York. There was no such demand when the mystery of surgery and barbery was a mere trade, as at Oxford where it was associated with the waferers and makers of singing-bread, or at Newcastle where it was combined with the wax chandlers; but even in these gilds there is evidence that a minimum of professional knowledge was demanded of applicants for the freedom on the surgical side.

The Company of Barbers was formally united with the fraternity of surgeons by the Act of Parliament which received the royal assent on July 25, 1540. Vicary was elected Master of the United Company at the end of John Pen's term of office, and acted in this capacity from September, 1541, to the usual date of election in September, 1542. The Union is commemorated in the well-known picture by Holbein, which has fortunately preserved for us portraits of the chief actors.

The United Company immediately proceeded to consider the state of the profession, and found that there were two problems to be solved—the one internal, the other external. The internal problem was itself twofold, and concerned the better education of the profession; the external problem was the better education of the public to appreciate the proper treatment of surgical disease. The internal problem had already been partially answered, and by combining the customs of the barbers in regard to their apprentices with the regulations of the surgeons in dealing with those licensed to practise, a fairly adequate system of surgical education was evolved. No complete medical education, however, could be given so long as the surgeon was subordinate to the physician. This subordination remained for many years, and the second part of the internal problem could not therefore be solved.

Apprentices.—Very few lists of apprentices to barbers have been published, but it is clear from a study of such of them as exist that the boys were drawn from the lower classes, as the occupation of the father is frequently given as a 'labourer'. There is no evidence to show that the surgeons' apprentices came from a much higher class. A successful surgeon sometimes took his son as apprentice, as in the case of Thomas Gale and his son William Gale; William Clowes and William Clowes junior. The Arris family, to whom we owe the Arris bequest, lasted through three generations. Jasper Arris was a barber as well as a surgeon; Mr. Alderman Edward Arris, his son, was a surgeon and did no barbery; his eldest son Robert followed the grandfather and father as a surgeon, whilst the second son became a doctor of medicine, a Fellow of the Royal College of Physicians, and a Member of Parliament; but then Mr. Alderman Arris was the father of twenty-three children, so he could well afford to give two to the profession of medicine. As a rule, however, the surgical apprentices were drawn from the humblest ranks, and owed any position to which they attained entirely to their own talents. Thomas Gale says in *An Institution of a Chirurgion*, "Few that have wel brought up their sonne will put him to the arte, because it is accounted so beggerly and vile". Similar testimony is borne by Sir Humphrey Gilbert as late as 1570 in that curious tract* which foreshadows the present University of London. Writing to Queen Elizabeth about "The erection of an Achademy in London for education of her Maiestes Wardes and others the youth of nobility and gentlemen", he says, "The Phisition shall practize to reade Chirurgerie, beacause thorough wante of learning therein we haue verie few good Chirurgions yf any at all. By reason that Chirurgerie is not now to be learned in any other place than in a Barbors shoppe". Here, too, is the

* Brit. Mus. Lansdowne MS. 98.

story of Mr. Thomas Hollier, who was Master of the Company in 1673. He was surgeon at St. Thomas's Hospital, and cut Mr. Pepys for the stone. Indeed, he was so lucky a lithotomist that he cut no less than thirty persons for the stone in one year without a single death. Mr. Pepys was fortunate in coming under him at this time, for his instruments afterwards became septic, and many of the rest of his patients died. I have only lately discovered this contemporary story of his rise. It is told by the Rev. John Ward, Vicar of Stratford-on-Avon, whose commonplace books I am slowly transcribing. He says: "Mr. Holliard, the great Chirurgeon in Warwick Lane, was a poor boy in Coventrie, his father was a cobbler, or at best but a poor shoemaker in Coventrie, and one Dr. Mathias (I think he was Queen Anne's Dr.)* about that time frequently coming to Combe Abbey and using Coventrie much spoke to Abraham Ashby an Apotecarie there to help him to a boy to dresse his horses and ride along with him; and Mr. Ashby spoke to Mr. White the Schoolmaster who told him he could help him to one, but his father was a foxing, drunken fellow, and the boy that he helped him to was this Mr. Holliard, the Chirurgeon; and afterwards Dr. Mathias died and Mr. Holliard got himself a little money and put himself prentice to Mr. Mullins his father of Shooe Lane and now he comes to what he is." The Mullins, father and son, were surgeons to St. Thomas's Hospital and were also eminent lithotomists.

Apprenticeship.—The first step in the life of an apprentice was the sealing of his indentures and their enrolment at Barber Surgeons' Hall in Monkwell Street and at the Guildhall. For this purpose the boy had to appear before the Court or governing body of the Company to show that he was not deformed or suffering from any chronic disease, for it was a tradition handed down from the earliest days of the gilds that the apprentices should be healthy, and free from blemish or from spot. The opportunity was taken to ascertain that he could at least read and write, and it was hoped that he might have some knowledge of Latin. Latin was taught at this time as a living language in the grammar schools throughout the country, so that a smattering of it might reasonably be expected, and a boy who knew no Latin must have been very badly educated indeed. Accordingly, in 1556, an ordinance was issued that no surgeon should take as an apprentice "but that he can skill of the Latten tongue and understand of the same", under penalty of a fine of forty shillings. It seems, however, to have been impossible to maintain the rule, for it was rescinded the following year, and in 1563 Thomas Gale, dedicating his *Enchiridion of Surgery* "unto the young men of his Companie, students in the noble art of Chirurgerie", says that he wrote in English "because the books you should use are written in a tongue which the most of you understand not".

At this time the boy was about 14 years old, and if he passed before the Court and his indentures were registered his period of servitude began. It usually lasted for seven years, in which case he would be made free of the Company and could practise on his own account by the time he was twenty-one. The period of apprenticeship, however, might be prolonged for eight or even nine years. The fee paid to the master was at first merely sufficient to cover the expense of clothing and feeding the boy in return for his services. In later years—when apprenticeship carried with it valuable reversions, as in the case of those who were bound to hospital surgeons like Hunter, Abernethy, and Astley Cooper—fees of £500 to £1000, which were then thought to be enormous, were readily paid.

Each master was allowed to take three or four apprentices according to his position in the Company, and if he died the apprentice was 'turned over' to another master or to the widow for the remainder of the term for which he was bound.

The average number of apprentices presented annually at the Barbers' Hall was 150, so that if the indentures lasted seven years there were always about 1000 apprentices belonging to the Barber Surgeons alone, and the other City companies had them in proportion. They were all strong and lusty young men, and a tight hand had to be kept

* Anne of Denmark, married to James the First of England and Sixth of Scotland.

over them. The Barber Surgeons fortunately had ample disciplinary powers over their apprentices, for they could whip or imprison them, or suit the penalty to the crime, as when they ordered a young dandy's head to be shaved when it was fashionable to wear the hair long.

Surgical Education.—As soon as the United Company had obtained the Act of Parliament in 1540, arrangements were made to provide an improved system of surgical education. Some machinery already existed for the purpose, as the Gild of Surgeons had always taught both its members and apprentices by a system of lectures. Each member of the gild was pledged under a fine of twenty shillings, either to lecture himself or provide an efficient substitute. The lectures must have been oral and, so far as I know, there are no manuscripts or students' copies of them in existence at the present time. Morested, Bradwardyn, Ferris, Keble, and other great surgeons of the fifteenth and sixteenth centuries are thus nothing more than names to us, for they have left no literary remains, though we know from the evidence of their pupils that they exercised a great influence in promoting a higher standard of surgical teaching and ethics. It is probable that their lectures dealt largely with their own experience and with the remedies they found most serviceable.

Anatomy.—Anatomy had always been taught, for it was the basis of surgery, but some far-seeing members of the gild got its teaching regularized by the introduction of the following clause in the Act of 1540: "That the sayd maysters or gouvernours of the mistery and comminaltie of barbouris and surgeons of London, and their successours yerely for euer after their sa[i]d discrecions at their free liberte and pleasure shal and maie haue and take without contradiction foure persons condemned adiudged and put to deathe for feloni by the due order of the kynges lawe of thys realme for anatomies without any further sute or labour to be made to the kyngs highnes his heyres or successours for the same. And to make incision of the same deade bodies or otherwyse to order the same after their said discrecions at their pleasures for their further and better knowlage instruction insight learnyng and experience in the sayd scyence or facultie of surgery." A supply of bodies was thus insured and the Company at once elaborated a system for putting them to the best use. They appointed a lecturer with the title of Reader of Anatomy, and four stewards or, as they would now be called, demonstrators under him. The Reader of Anatomy seems at first to have held office for an indefinite period, but he was afterwards appointef dor terms of three to five years. The stewards acted for four years; during the first two they learnt their duties, and during the last two they executed them under the direction of the Reader, and were called Masters of Anatomy. Unfortunately there are no extant records of the first few years of the Company's existence, so that it is impossible to discover who was appointed the first Reader of Anatomy. I believe, personally, that it was Master Vicary himself, and that he lectured on the old lines. My predecessors, the surgeons of St. Bartholomew's Hospital, published *The English-mans Treasure. With the true Anatomie of Mans Body*, after his death. There has always been a tradition that it first saw the light in 1543, although it was not printed until 1577. It is a worthless treatise on anatomy based upon the teaching of Lanfranc and Henri de Mondeville, but it shows that Vicary was looked upon as an anatomist by his contemporaries, and the edition of 1543 may have been the text from which he had lectured. Be this as it may, a vacancy for a Reader of Anatomy occurred about 1546, and the Company adopted the wise policy of choosing the best possible man for the post. They elected, no doubt by the advice of Vicary and on the recommendation of Dr. Butts, Dr. John Caius, a Cambridge graduate, aged 36. Caius had lately returned from Italy, where he had been a fellow lodger with Vesalius at Padua and an acquaintance of Realduus Columbus, the two great anatomists of their age. He was also a competent Greek scholar, and had made a special study of Galen, hunting through the great libraries of Italy for accurate texts. In 1544 he issued his edition of the *De Medendi Methodo* and other works of Galen which had not previously been published. No better choice could have been made by a young and virile society which included a large uncultured element amongst its members. Caius was a grave and learned man, a stickler for etiquette, and a bachelor. He lived in the



FIG. 164.—John Banester delivering the visceral lecture at the Barber Surgeons' Hall, London, in 1581.

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immediate neighbourhood of the Barber Surgeons' Hall in Monkwell Street, for he had a house in St. Bartholomew's Hospital, and could thus devote sufficient time and energy to his work. He held office until 1563, and was succeeded by Dr. Cunningham. His long tenure of the lectureship left a permanent mark upon the teaching. The Reader of the Anatomy was ever afterwards a young university graduate. The post was well paid, and many of its holders subsequently achieved fame. The Anatomy of Realdus Columbus was long a recognized text-book, and some work of Galen, either the *De Methodo* or the *Therapeuticon*, with a slight knowledge of Hippocrates, was required of every apprentice or surgeon before he was granted the licence of the Company.

It is easy to reconstruct the manner in which anatomy was taught in the sixteenth century, for this picture (*Fig. 164*) is a faithful representation of such a lecture as it was given in the anatomical theatre at the Barber Surgeons' Hall. It shows John Banester delivering the visceral lecture in the year 1581. The two Masters of Anatomy with a probe and scalpel stand beside him, whilst the two stewards are on the opposite side of the table. The minute accuracy of detail is shown by the *vade mecum* which is being used as the text of the lecture, and it will be noticed that the skeleton is supported and crowned with the colours of the Barber Surgeons' arms, whilst a wreath of the same colours surmounts the helmet in Banester's arms. The book on the reading desk is Realdus Columbus, and from its size I thought it must be the folio edition printed at Venice in 1559. Reference to this edition, however, shows that the passage at which the book is open occurs on folios 227 and 228. The picture gives the pages 419 and 420. Looking about for another edition, I found the octavo published at Paris in 1572, and turning to Chapter 5 of Book XI, I discovered the latter part of the passage quoted occurring just as the painter saw it on pages 419 and 420. It shows that Banester had not only chosen the last edition of his text-book to lecture from, but for the convenience of the students he had selected the cheaper and more portable book. Time has dealt gently with Banester, for in addition to the picture of his lecture, there exists in the University Library at Cambridge a casket of wood and leather ornamented with gold and blind tooling, containing the anatomical figure of a man and an ivory skeleton. The inscription on the box (*Fig. 165*) reads

"Iohannes Banister Medicus
Londinensis, & Anatomicus insignis, Academiae
Cantabrigiensi dono dedit cistellulam hanc, unâ-
cum artificioso Scelecto, & exteriorum musculo-
rum humani corporis Icone, affabrè factis, & in
eadem contentis. Anno Dom. 1591."

The casket is too fragile to travel, but Dr. Jenkinson, the University Librarian, has kindly allowed me to have it and its contents photographed (*Figs. 165 and 166*).

The subjects were probably chosen with considerable care during their life, as the executions were so numerous that a selection could be made. The material was of the best, as very little physical damage was done at the hanging. The medical students in Vicary's time, therefore, were in a much better position than their successors two hundred years later, who had to resurrect the body, and, in consequence, rarely had an opportunity of seeing the muscles and tissues of the neck, which were always lacerated in the process of exhumation, or by the violence of the long drop. Indeed, so slight was the injury inflicted at Tyburn, and the subjects so often recovered when they were brought to the Hall, that the following order was made on July 13, 1587: "Item yt ys agreed That yf any bodie w^{ch} shall at anie tyme hereafter happen to be brought to o^r Hall for the intent to be wrought uppon by Thanatomistes of o^r Companie shall revyve or come to lyfe agayne as of late hath ben seene The charges aboute the same bodie so reviving shall be borne levied and susteyned by such person or persons who shall so happen to bringe home the Bodie. And further shall abide suche order or ffyne as this Howse shall Awarde." After this the subjects do not appear to have come to life again. There was no difficulty at first in obtaining the bodies, but in later years the Company had sometimes

to be assisted by a military guard, so fierce was the resistance offered by the mob at the place of execution.

Bodies being relatively plentiful, they were dissected by systems rather than by regions, a plan which is still customary in the veterinary schools of this country. The viscera were considered first, as being the most perishable, the muscles and arteries next, the bones, ligaments, and joints last. Different benefactors endowed different



FIG. 165.

lectureships for this purpose, and thus arose a visceral lecture, a muscular lecture, and an osteological lecture. Of these lectureships vestigia still remain in our Arris and Gale lectureship; the Arris bequest being originally devoted to a muscular and the Gale to an osteological lectureship.

The anatomical teaching was long kept in the hands of the Barbers' and Surgeons' Company as a strict monopoly, and no body could be dissected by any of its members without leave from the Company. Such leave, however, was not unduly withheld when

application was made in a proper manner. Thus there arose two classes of anatomy. The one, called the public anatomy, was the formal dissection of the bodies of the four criminals. It soon became one of the sights of London, and involved the United Company in some expense to provide proper accommodation for the crowds who attended. The second class consisted of private anatomies held as opportunity occurred, or as occasion required, by those who were devoting themselves to anatomy as a study.

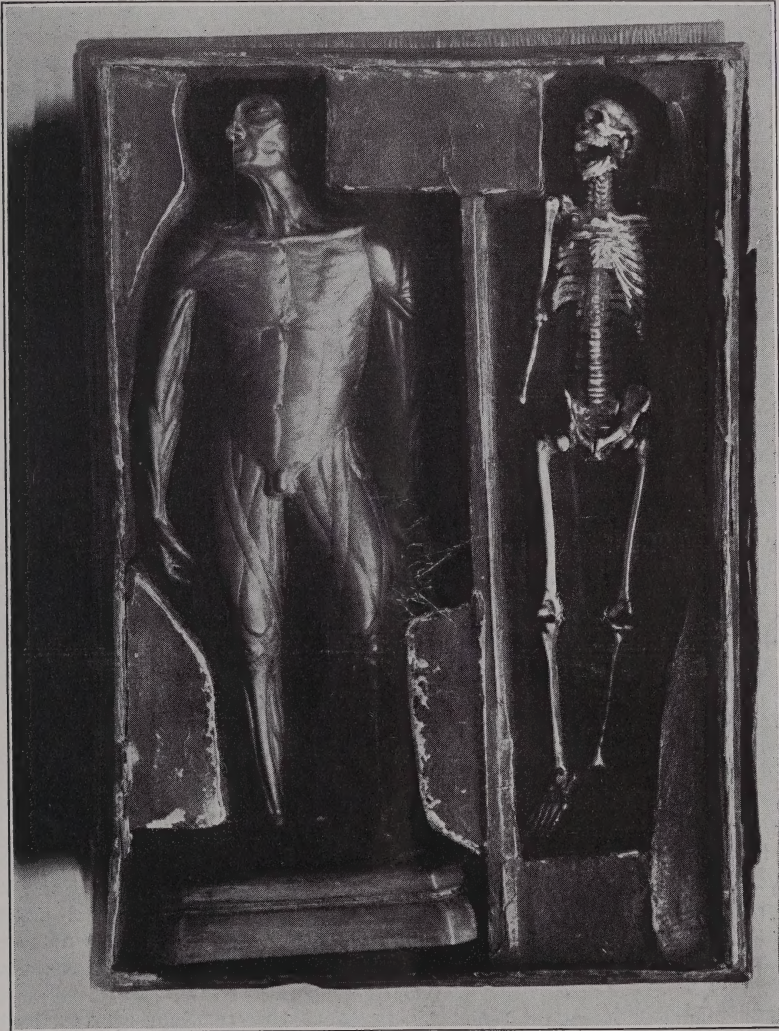


FIG. 166.

Each of the public anatomies lasted for three days, after which for another three days the masters of the anatomy were allowed to teach their pupils, the whole business being ended with a feast, and it was the duty of the two junior stewards of anatomy to see that the tables were properly furnished. The more distinguished visitors attending the dissection were invited to the banquet, and for this hospitality on the part of the Company we are indebted for the account left us by Mr. Pepys, on Feb. 27, 1662-3, of Dr. Scarborough's demonstration of the parts concerned in vesical calculus. For each

of the public anatomies the lecturer received £10 and the masters of anatomy £3 each, the total expense being £22 14s. 6d.

Surgery.—Surgery was taught by a compulsory lecture given every Tuesday afternoon throughout the year; Tuesday being chosen because it was the day on which the Court of Assistants, or, as we should say, the Council, held its ordinary meeting. The earlier apprentices and surgeons of the United Company were fortunate in their teachers. Caius was the lecturer on anatomy; Gale (*Fig.* 163), Clowes, Halle (*Fig.* 169), and Balthrop taught surgery. Rough men, of uncertain temper and with much mother wit, they had been trained in the wars, were attached to large hospitals, and had the chief surgical practice in London. They quarrelled violently, fought each other with their fists, and sometimes promised to cure patients who were incurable, for which they were duly reprimanded by the Company and made to refund the fee. But in their writings at any rate they speak kindly of each other, and wrote verses to recommend each other's books. They were in truth a band united, as I shall show presently, with the common object of raising the status of surgery.

The lectures were arranged in courses, each course being given in turn, the 'auncientist Surgeon' beginning, and the others in due order following. As in the case of anatomy, the lectures took the form of a running commentary upon a text-book, the text-book being either one in traditional use, like Guydo's *Questions*, which had been translated into English, or the *Surgery* of Tagaultius, which was in Latin, or it might be one written by the lecturer himself. Gui and Tagaultius were respectively the 'Rose and Carless' and the 'Gask and Wilson' of the day. I have read both. They really contain a great deal of sound and useful surgery if they are considered in the light of contemporary knowledge. A part of the course was devoted to bandages, the recognition of surgical instruments, and the use of such drugs and external applications as were allowed the surgeons by the physicians.

Lapse of years removed this brilliant band of surgeons, and no worthy successors were forthcoming. The Company made repeated appeals to the surgical members, and tried to make them lecture, or in default pay a fine. They preferred to pay the fine, until, at last, in desperation, a paid lecturer on surgery was appointed, and the surgeons were ordered to find his salary of £20 a year out of their own pockets. I show you here the surgical text-books of the time. In addition to Gui and Tagaultius, which I have just mentioned, they are Oribasius; Halle's edition of Lanfranc; Gale's *Surgery* and translations of Galen; several works of Clowes; Banester's *Treatise on Ulcers*; Bullen's *Dialogues*; Valerius Cordus for drugs; and Realdus Columbus for anatomy.

Pathology.—Pathology was sometimes allotted to the lecturer on anatomy and was sometimes a part of the surgical course. Inflammation and its results, and the various kinds of tumours, were common to each course. In the hands of the anatomist—because he was a physician—various treatises of Galen and a little Hippocrates were also dwelt upon; the surgeons, less learned and knowing no Greek, either had the Latin versions translated into English, or, as is more likely, curtailed this portion of the course to the great advantage of their audience, for the matter was both dry and useless. It is somewhat remarkable that no attempt was made to teach by clinical examination; indeed, there is some evidence to show that the introduction of patients at lectures was definitely forbidden. It was not until 1602 that a clinical examination was first required, and then it was in Scotland.

Examination.—The United Company elaborated their system of examination with considerable care. No one could practise surgery in the city of London or within a radius of seven miles without their licence, and it was decided that examination was the best means of determining a man's fitness to practise. Two classes of candidates presented themselves: (i) their own apprentices, and (ii) surgeons who had been in practice elsewhere—foreigners as they were called technically—and who wished to settle in London. The first step of the United Company, therefore, was to appoint eight examiners, the number being afterwards increased to ten—freemen of the Company, of course, but not necessarily of the Assistance or Council. Four of these examiners undertook the examination of candidates in the presence of the Master and Wardens of the Company, who might, of

course, be barbers, knowing nothing of surgery. Upon the report of the examiners the Master, Wardens, and Court of Assistants granted the licence, or preferment of grace as it was called.

We have a clear picture of the method of procedure. As soon as the apprentice was out of his indentures he presented himself at the Hall in Monkwell Street with a recommendation from his Master. Ushered into the Hall (*Fig. 167*), he was asked by the Master and Wardens what he intended to do after he was made free of the Company. If he replied that he proposed to practise surgery, he was asked whether he meant to settle in London. If he said, "That is my intention," he was sent over to the examiners, of whom four were always present, and they proceeded to test his knowledge. They asked him in English about anatomy and surgery; of what parts they consisted; what were the bones, their number in different parts of the body, how they were moved; where the large vessels ran; what was the use of the liver, the spleen, and brain; in surgery and pathology what were the tumours *præter naturam*, how he would treat an apostume or inflammation, what should be done for the bite of a mad dog, what were the causes of blood



FIG. 167.

in the water, what was a struma, and so on. If his answers proved satisfactory—and they did not always prove so—he was licensed to practise surgery for a term of years varying with the knowledge he had shown, and was admitted a freeman of the Company.

In the early days, of which alone I am now speaking, he was advised at the same time to proceed to the higher degree of Master of Anatomy and Surgery—the second preferment of grace—and was told that he could do so either by writing an Epistle, i.e., a thesis to be read before the Company every six months; or, if he were not gifted with the pen of a ready writer, he might be examined half-yearly to determine what improvement he had made in practice. If the candidate were then approved, he was formally admitted a Master of Surgery and Anatomy, which was a permanent licence to practise, and allowed him to apply to the Bishop of London for the Bishop's licence, which "is said to be confirmation of a Surgeon". Few, however, took the second step, and it seems to have quickly fallen into disuse, its place being taken by 'the Great Diploma', granted after a special examination to those who aspired to the highest surgical position. It was somewhat analogous to our Fellowship examination.

The cost of the licence was viiid. ; the cost of the Mastership was a spoon weighing an ounce of silver, with the applicant's name written upon it, as a present to the Company, and viiid. to the clerk for enrolling the name.

Rejections were not infrequent, but it was more usual to grant an ignorant man a temporary licence, either for a short time or on condition that he should call in some more experienced member of the Company whenever he had to treat a patient. Occasionally the candidate was so shockingly bad that the coroner was invited to hear the examination—a good practical way of saving subsequent inquests. Here is an example : “ One John ffoster a poore and unskylfull man of this Company made his appearance before the Mrs. of this Company and was examined concerninge his skyll in the arte of Surgery and was found altogether unskillfull in all the partes thereof. Whereuppon it is ordered that Mr. Wilbraham, Coroner to this Cytie, be warned to be here with the Coroner's Inquest on Thursdaye next by tenne of the clock in the forenoone to be satisfied by their owne hereinge of the unskillfullness of the said ffoster.”

When the apprentice said that he did not intend to practise in London or the suburbs, he was admitted to the freedom of the Company without examination, and went his way to get the licence required in the district where he settled, whilst he had the added dignity of having been educated in London.

It was also possible for a surgeon to obtain a licence to practise even though he had not served an apprenticeship to a freeman of the Company. Such licences were often granted to pleasure some great man and upon his personal application. It was productive of much harm, and detracted from the reputation of the Company when the Master and Wardens were mercenary, or when the Company was in financial straits, as frequently happened, for unworthy men were then admitted. John Read, of Gloucester, took the Company to task for this fault. He says many do “ practise abroad their accustomed deceits under the colour of admittance from the Hall of London. . . . A thing greatly to be lamented that those which are or should be the fathers of arte and upholders of good artists should so slightly passe their licence to such ignoraunt asses, to maintaine them, not onely in coosening her Majesties subjects of their monie, but oftentimes depriue them of their lims, yea and also their lives. But it is no meruaile for monie is sweete, and what is it but Lucre may doe ? for I myselfe, talking with one of the same companie and felowship, complayning uppon the abuses thereof, in passing their licences to such, made me this answere. In deed, quoth he, it is not well, but we were as good to take their monie for they would play the knaves nevertheles . . . I know someone of small learning and lesse knowledge, who hauing trauelled 180 miles to fetch a seale weying fower pound besides the apurtenances therunto belonging, whereby he is growen so farre in love with himself and so undiscretlie doteth ouer his owne doings at his returne that he maketh his travel, and conquest as he thinketh, ordinary table talke, for he walked from Tauerne to Tauerne and from Alehouse to Alehouse with his licence at his girdle closed in a boxe, as though he had been the proctor of some spitell house agrauating the latter so monstrouslie, as if he had endured the verie labours of olde Hercules, and no meruaile, for when he had made his market, and receaued his letters of marke, falling in companie with some others, and grewe in speeches of practise (for there uppon he standeth, but his method is small) did not stick to confirm that Arsenick and rusty Bacon, was a present remedie for wounds made with goon-shot. And being another time demaunded by a learned Doctor in Phisicke how a wound came to be an ulcer was stricken dum. And yet of like he might aunswere his examinations well. For that (as he saith) he was used so familiarly and plast amongst the best. A meane surely to embolden him well for he was but bashfull when he was before the worshipfull Doctor. And yet will not stick to make himselfe comparable to any and will impudentlie cracke, that any man shal neuer attaine to do the like cures as he hath don, with a great deal more of shamles comparisons.”

The possession of a licence did not relieve its holder from what would now be called post-graduate teaching. Under penalty of a fine the members of the Company, including the Master and Wardens, were obliged to attend the demonstrations in anatomy and the lectures on surgery, exemptions being only rarely granted. They had not only

to attend, but for the honour of the Company they had to come properly dressed, they were bound to remain the whole time, and were enjoined not to ask questions until the lecture was ended, when they might courteously point out anything which they thought had been taught incorrectly.

Presentation of Cases in Peril of Death or Maim.—From time immemorial there was a most salutary custom of consultation in all serious surgical cases. This was known as “the presentation of patients in peril of death or maim”. It applied equally to the oldest practising surgeon and to the one most recently licensed. It provided that everyone who was called in to treat a patient likely to die, or who might afterwards be permanently incapacitated, should summon to his assistance the Master and Wardens, originally of the Gild of Surgeons, later of the United Company, after which the surgeon in attendance was held blameless for anything that might happen. The consultation was held before the third dressing of the patient, practically before the third day. It was jealously enforced, for there are numerous instances of surgeons being fined, sent to prison, and even struck off the roll, for not presenting their cures ‘in peril of death or maim’. In the United Company, where the Master or Wardens might be barbers not practising surgery, a surgeon or surgeons could be nominated to act in their place. The work on their part was gratuitous, but provision was made that in case any recompense was offered it should be equally divided amongst them. The system worked satisfactorily, for it applied impartially, gave confidence to the friends of the patient that everything possible had been done, relieved the surgeon of responsibility in a very litigious age, and gave the senior members of the Company a large experience in difficult cases. Incidentally it shows how small must have been the population of London and seven miles round when the Master and Wardens, who were themselves in practice, could undertake such additional labour under the penalty of a fine for not attending when called upon to do so.

Education of the Public to Appreciate Surgery.—The education of the public to appreciate the value of better surgical treatment proved to be a more difficult task than the education of the surgeon himself. Surgery had reached a very low ebb at the beginning of the sixteenth century, for in 1511 an Act of Parliament for the appointing of physicians and surgeons recites that “the science and cunning of Physic and Surgery is daily within this Realm exercised by a great multitude of ignorant persons of whom the greater part have no insight in the same nor in any other kind of learning. Some also can no letters from the Book, so far forth that common Artificers as Smiths, Weavers and Women boldly and accustomably take upon them great Cures . . . to the great infamy of the Faculty and the greivous Hurt, damage and destruction of the King's Liege people most especially of them that cannot discern the uncunning from the cunning”. This is confirmed by Clowes some years later, who says “that many in these days do take upon them to intermeddle and practise in this art, wherein they were never trained nor had any experience; of the which a gret number be shameless in countenance, lewd in disposition and brutish in judgement, which do forsake their honest trade whereunto God hath called them and do daily rush into physic and surgery. And some of them be Painters, some Glaziers, some Tailors, some Weavers, some Joiners, some Cutlers, some Cooks, some Bakers and some Chandlers. Yea, now-a-days it is apparent to see how Tinkers, Tooth-drawers, Pedlars, Ostlers, Carters, Porters, Horse-gelders and Horse-leeches, Idiots, Apple-squires, Broom-men, Bawds, Witches, Conjurors, Sooth-sayers, and Sow-gelders, Rogues, Rat-catchers, Runagates and Proctors of Spittle houses with such other like rotten and stinking weeds which do in Town and country, without order, honesty or skill, daily abuse both physic and surgery, having no more perseverance, reason or knowledge in this art than hath a goose, and most commonly useth one remedy for all diseases and one way of curing to all persons both old and young, men, women and children which is as possible to be performed or to be true as for a shoe-maker with one last to make a shoe to fit for every man's foot and this is one principal cause that so many perish”. The state of surgery indeed was nearly such as to warrant the advice given to a surgeon by William of Salicet in 1275, that “a wise surgeon will do well to refrain from stealing anything while he is actually in attendance and will not employ notoriously bad

characters as his assistants because such actions are apt to lessen the confidence of the patient and may thus spoil an otherwise good operation".

It is clear that the whole country was overrun by quacks, for we have accounts of their doings in London, Maidstone, and Gloucester, which are now merely amusing, but were then of serious importance. Take a single example from each town. Gale (*Fig. 168*) says: "In the year 1562 I did see in the 2 Hospitals of London, called St. Thomas's Hospital and St. Bartholomew's Hospital, to the number of 300 and odd poor people that were diseased of sore legs, sore arms, feet and hands with other



FIG. 168.

parts of the body so sore infected that one hundred and twenty of them could never be recovered without loss of a leg or an arm, a foot or a hand, fingers or toes, or else their limbs crooked so that they were either maimed or else undone for ever. All these were brought to this mischief by witches, by women, by counterfeit javils that took upon them to use the art of surgery, not only robbing them of their money but of their limbs and perpetual health. And I, and certain others, diligently examining these poor people how they came by their greivous hurts and who were their chirurgions that looked unto them, and they confessed that they were either witches which did promise by charms to make them whole, or else some women which would make them whole with herbs and

such like things, or else some vagabound javil which runneth from one country to another promising unto them health only to deceive them of their money. But what manner of cures they did I have told you, such cures as maketh the devil in hell to dance for joy to see the poor members of Jesus Christ so miserably tormented”.

This state of affairs in London is borne out by Clowes, who mentions that he had amputated seven arms and legs in a morning at St. Bartholomew's Hospital. This statement was not made boastingly, but incidentally as showing a part of his routine work.



FIG. 169.—John Halle.

It was no better in Kent, for Master John Halle (*Fig. 169*) of Maidstone reports that in 1562 there came “one William, a shoe-maker, pretending to be very cunning in curing of diseases of the eyes; and being brought to a friend of myne to have his judgement in one eye, whereof the sight was weake; first putting them in much fear of the eye he at length promised to doe great things therto. But the friends of the party diseased desired me first to talke with him to understande his cunning; which, at their request, I did at a time appointed and asked him if he understoode what was the cause of her infirmitie. He said he could not tel but he wold heale her he doubted not. Then I asked him whether he were a surgion or a physitian; he ansered no he was a shoe-maker

but he could heale all manner of sore eyes. I asked him where he learned that ; he sayde that was no matter. Well, sayde I, seying that you can heale sore eyes what is an eye ? Whereof is it made ? Of what members or parts is it composed ? And he sayde he knewe not that.

"Then I asked hym if he were worthy to be a shoe-maker or to be so called that knewe not howe or wherof a shoe was made ? He answered, no, he was not worthy. Then, sayde I, how dare you worke on such a precious and intricate member of man as is the eye, seying you knowe not the nature therof ? and why or by what reason it doth see more than a man's nose or his hande ? He answered that though he could not tell this yet could he heale all maner of sore eyes. And that whereas maister Luke of London hath a great name of curyng eyes he coulde do that which maister Luke coulde not doe nor turne his hande to. Thus bragged this proud varlette against and above that reverent man of knowne learning and experience.

"And I sayde, I thought so, for Maister Luke, sayde I, is no shoe-maker. Well, sayde he, I perceive you do but skorne me and flunge out of the doores in a great fume and could not be caused to tary and drynke by any intreaty neither have I since that tyme heard anythyng of hym".

The same story comes from Gloucester, where, as it was near a seaport, there were foreign, as well as indigenous, rogues to contend with. For example : Read tells us that "there came a flemming into the cittie of Glocester named Woolfange Frolicke, and there hanging forth his picture, his flagges, his instruments and his letters of marte with long labels, great tassels, broad seales closed in boxes, with such counterfeited shewes and knackes of knaverie cosening the people of their monie without either learning or knowledge, and yet for money got him a license to practise at Bristowe (Bristol). But when he came to Glocester & being called before some being in authoritie by my selfe & others, he was not able to aunser to any one poynt in Chirurgerie, which being perceived and the man knowen the matter was excused by way of Charitie to be good to straungers".

This attitude of tolerance towards quacks was the root of the evil, and it was so general that in 1542 (34-35 H. 8. Ch. 8) a Bill was promoted in Parliament "that persons being no common surgeons may minister Medicines notwithstanding the Statute". The Bill passed, and it "ordained, established and enacted that at all time from henceforth it shall be lawfull to every person being the King's subject, having knowledge and experience of the nature of herbs, roots and waters by speculation or practise to use and minister them to their cunning". This opened the door very widely to unlicensed practitioners, for the position of the surgeons was not safeguarded in any way, not even as Guthrie suggested many years later (April 29, 1834), that a quack should be allowed to practise if he took out an annual licence, and should be punishable for ignorance as well as negligence, whilst a duly qualified practitioner should not be required to renew his licence annually and should only be punishable for negligence.

Lack of Medical Education.—Surgery in England had always been subservient to physick, and in this subordinate position it was destined to remain until our own times. The physicians, oppressed by the weight of tradition, were bound by the fetters of the various sects which arose successively in medicine. They only made very slow advances in practice, and their progress was actually retarded by the interposition of the apothecaries between themselves and their patients.

The surgeons, on the other hand, were necessarily brought face to face with the same problems which confront us to-day. When should wounds be closed ? When must they be left open ? Was it safe to leave a head injury untreated, or should it be operated upon ? What was best to be done for the injuries which daily presented themselves as a result of trade accidents, or the disputes which were of constant occurrence in mediæval towns where everyone went armed and passions were easily inflamed. Readiness of resource, mother-wit, and a fair average of manipulative skill were characteristics of the Tudor surgeon, and he trepanned the head, opened the chest, cut for stone, and amputated with remarkable success. He also had some knowledge of herbs and simples, and

there had been handed down to him an antidotary or collection of prescriptions which had proved useful to his predecessors. But of medicine he had no knowledge. All that he did was empirical, and he was in complete ignorance of what would now be called the Institutes of Medicine even as they were then understood.

The result is interesting. There arose for a generation or two excellent surgeons who wrote well in their native tongue and were able to record their experiences. Their books are still worth reading, but they are one and all records of individual cases. No attempt is made to generalize from the results obtained even when the writer could collect from his own observation several similar cases or even whole groups of cases. I suppose we have all passed through this stage when as young men we were proud to publish a single case in one of the medical journals; but as we gained greater experience we cared less for individual facts and thought more of the conclusions we were able to deduce from the correlation of them.

The Tudor surgeons were arrested at the earlier stage, and it was not until a century later that Wiseman began to generalize on his own experience. The absence of this faculty of generalization was, I think, felt instinctively by the great Elizabethan surgeons. They knew that something was wanting in their education, and they believed that if their pupils could be taught medicine as they had learnt surgery, they would be the better for it. Gale says: "Young men should take counsel as well of the learned physician as of the learned surgeon, for this art is so joined together that neither may the parts be divided neither yet the instruments without the overthrow and destruction of the whole art". And in the same way Read says: "I do withall affirm that all chirurgeons ought to be seen in physic, and chirurgery is divided from physic not without great hurt unto mankind". I have no doubt that if the physicians had allowed the surgeons to be taught some medicine they would have been the better for it, and their social position would have been improved, but it is very doubtful whether surgery as a whole would have derived any benefit. Medicine itself was nebulous so long as it was based on speculation rather than on observation, and its teaching at this time would probably have reduced surgery from practice to theory. Gale, like Halle and Banester, puts the position quite temperately when he says, "To counsel with a physician being a grave and learned man in the principles of this art—in matters of weight—I take it to be very necessary; for what is he that is wise that will refuse the counsel of a wise and learned man, and especially of him that possesseth the principles of the same art? For physiologia, whereof the physician taketh his name, is the first and chieftest part which he that worketh in the art of medicine doth prove for that it doth consist in the knowledge of the several natural things, and in the residue thereto appertaining. But yet this doth not follow that a learned and expert chirurgeon should not use diet and purgations and other inward medicines at all times when need doth require".

John Banester writes in the same strain but somewhat more rhetorically: "Some of late more precise than wise have fondly affirmed, foolishly feigned and frantically faced, that the chirurgeon hath not to deal in physic. Small courtesy is it to break faithful friendship or at-one-ment, but it is mad dotage to part that which cannot be separated. How can physic be praised and surgery discommended? Can any man despise surgery and not defame physic? No, sure, he that speaketh evil of the one slaunders both, and he that robbeth the one spoileth the other. For though they be at this time made two distinct arts and the artists severally named, yet sure the one cannot work without some aid from the other, nor the other practise without the aid of both". So, again, John Read—a much younger man and John Banester's son-in-law—claimed that "Chirurgery is maimed and utterly unperfect without the help of those other parts—which consisteth of prescribing inward medicines and convenient diet, and is so near linked with these in alliance that no man deserves to be called a chirurgeon that is ignorant in physic . . . and I do withall affirm that chirurgeons ought to be seen (i.e. examined) in physic, and that the Barber's craft ought not to be termed chirurgery".

Nothing, however, came of this well-intentioned advice. The surgeons remained on

a lower plane, and when the reformers died—first Read, then Gale, followed in due course by Clowes and Banester—no successors, with the exception of Woodall, carried on their work in England under James and Charles.

Thus ends the second Vicary historical lecture. I have tried to show how much the education of a surgeon owes to the wise counsel of a few great men in those critical times, when the fraternity of surgeons could no longer continue along the traditional lines and there was a real danger of surgery passing into the hands of a trade gild. The example set in London was quickly followed in the provinces, and, within a few years of the establishment of the United Company of Barbers and Surgeons, the large towns of England had remodelled their Barbers' Gilds, and had often followed the example of the United Company in the most minute detail. In due course surgery outgrew the need for a union with the barbers, and in 1745 a dissolution of the partnership took place. The disastrous history of the Surgeons' Company showed how useful the alliance with the Barbers had been to the surgeons. The barbers were business men, the surgeons were thoroughly unbusinesslike. The Clerk of the Surgeons' Company defaulted and left the Company penniless; their building became ruinous; their library contained no books; and, finally, by sheer ignorance of their own Constitution, the Company destroyed itself after an inglorious career of forty years. By its supineness and by its tactless methods a host of enemies had been raised up—and it became impossible to establish the bankrupt Company on the old lines. The present College rose, indeed, upon its ruins; but, because we are now flourishing, do not let us forget how much we owe to the Company of Barbers, our business partners for more than two hundred years, and we shall then understand that the Union of Barbers and Surgeons was not so incongruous or so useless as it at first sight appears.

